Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WEI-CHENG LEE, BIING-HUANG YANG,
LONG-CHUN TSAI and MING-TZUNG HSU

Appeal No. 2002-1874
Application No. 09/553,302

ON BRIEF

Before ABRAMS, FRANKFORT, and STAAB, Administrative Patent Judges.

ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 5, 6 and 8-20, which are all of the claims pending in this application.

We REVERSE.

BACKGROUND

The appellants' invention relates to an apparatus for storing liquid. An understanding of the invention can be derived from a reading of exemplary claim 5, which appears in the appendix to the Brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Marshall	1,856,492	May 3, 1932
Mair	3,527,379	Sep. 8, 1970

Claims 5, 6 and 8-20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Mair in view of Marshall.[1]

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejection, we make reference to the Answer (Paper No. 12) for the examiner's complete reasoning in support of the rejection, and to the Brief (Paper No. 11) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

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[1]We note that the preamble of claim 16 states that it depends from claim 16, and the preamble of claim 17 that it depends from claim 17. It would appear that claim 16 should depend from claim 15, and claim 17 from claim 16. These errors should be corrected.

The examiner's rejection is that the claimed subject matter would have been obvious to one of ordinary skill in the art in view of the teachings of Mair and Marshall. In particular, it is the examiner's view that all of the subject matter recited in independent claims 5, 15 and 18 is disclosed or taught by Mair except for the details of the vent valve. However, the examiner takes the position that it would have been obvious to modify the Mair storage tank by utilizing the valve disclosed by Marshall "in order to provide vent control of the gas pressure within the tank 17 of Mair" (Answer, page 4).

The test for obviousness is what the combined teachings of the prior art would have suggested to one of ordinary skill in the art. See, for example, In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In establishing a prima facie case of obviousness, it is incumbent upon the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellant's disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1052, 5 USPQ2d 1434, 1439 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988).

The appellants' invention relates to an apparatus for storing and dispensing high purity liquids for use in fabricating microelectronic substrates and the like, such as deionized water. Each of the appellants' independent claims is directed to an apparatus for storage of a liquid comprising a storage tank in fluid communication with a liquid inlet port, a liquid outlet port, a gas inlet port and a gas outlet port, and a floating plug valve connected to and in fluid communication with the gas outlet port.

Mair is directed to a system for storing in the liquid phase products that normally are in the gaseous phase, such as compressed ammonia. Mair discloses a tank (17) in which the ammonia is present in liquid form in the lower portion of the tank and in gaseous form in the upper portion. The tank is in fluid communication with a first liquid inlet port (61) through which liquid ammonia is delivered to the tank from a storage system, a liquid outlet port (70) in fluid communication with the tank through which liquid ammonia is delivered from the storage tank to a point of use, and a gas outlet port (23) in the form of a relief valve which activates upon the presence of an unacceptably high pressure in the tank. A flash tank (40) is provided for receiving gaseous ammonia from the upper portion of the tank and recondensing it into liquid for return to the tank. As explained in column 4, line 53 et seq.,

> liquid ammonia from the body 41 [of liquid ammonia] contained in the flash tank 40 is supplied via the pipe 47 through the expansion valve 48 and the outlet 49 into the interior of tube 25 [in the tank]. This liquid ammonia is relatively warm and under relatively high pressure, whereby a first portion thereof immediately flashes within the tube 25 into gaseous

> ammonia that rises in the tube 25 and exits through the passages 28 into the chamber 22.

As we understand the operation of the system from this explanation, the ammonia entering tank 17 from outlet 49 is in liquid form, some of which liquid flashes into the gaseous state after it enters the tank. Thus, port 49 provides ammonia in the liquid state, and therefore is a liquid inlet port. This being the case, it is our view that the examiner erroneously has designated port 49 to be the gas inlet port required by the claims (Answer, page 3). Thus, from our perspective, the Mair tank is in fluid communication only with a gas outlet port (relief valve 23), another gas outlet port (51), a liquid outlet port (70), and two liquid inlet ports (61 and 49), and Mair fails to disclose or teach the gas inlet port required by all of the claims.

This deficiency is not alleviated by consideration of the teachings of Marshall, which was applied by the examiner for its teaching of the type of floating plug valve set forth in the claims, for even considering, arguendo, that suggestion exists to combine the references in the manner proposed by the examiner, the result would not be the invention recited in independent claims 5, 15 and 18. The applied references therefore do not establish a prima facie case of obviousness with respect to the subject matter recited in the three independent claims, and we agree with the appellants that the rejection cannot be sustained.

CONCLUSION

The rejection is not sustained.

The decision of the examiner is reversed.

NEAL E. ABRAMS Administrative Patent Judge	)))
CHARLES E. FRANKFORT Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
LAWRENCE J. STAAB Administrative Patent Judge	))

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